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TORQUE-TUBE

THE NEWS PUBLICATION FOR MEMBERS

OF THE 1937-1938 BUICK CLUB • FOUNDED 1980

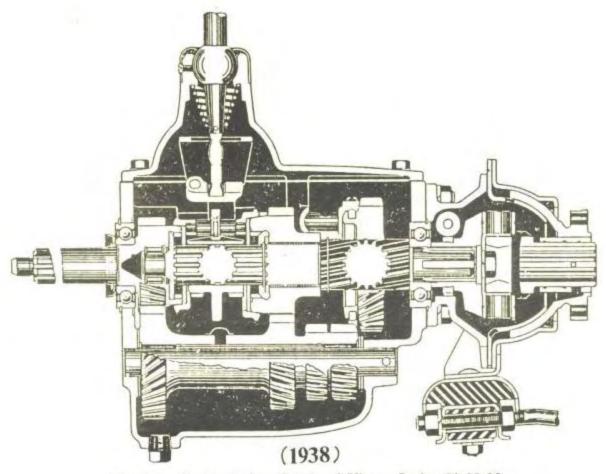


Fig. 7-2. Transmission, Sectional View-Series 60-80-90

Volume V · Number 5



THE TORQUE-TUBE THE NEWS PUBLICATION FOR MEMBERS OF THE 1937-1938 BUICK CLUB · FOUNDED 1980



VOL.V • MARCH 1987 • NO.5

- William E. Olson, Editor •
- 842 Mission Hills Lane, Worthington, Ohio 43085 •



Here's News



CLUB MEET AND SHOW IS PLANNED

OK, Buick fans, here's what you've all been waiting for:

OUR VERY OWN CLUB MEET!!

As the following letter from Marv Rhynard indicates, tentative arrangements have been made for a 1937-1938 Buick Meet, Show, Get-Together and Semi-Centennial Celebration this very summer. Please read this.

Bill,

This is a follow-up to our phone conversation of January 22, 1987.

Bob Jones has reserved Saturday, July 18, 1987, for a meeting of the 37-38 Buicks at Crossroads Village on the northeast side of Flint, Michigan. Crossroads Village is a county owned facility featuring an old time village park with a carousel, wagon rides, animals etc. It also features a steam locomotive. Arrangements have been made for free admittance as well as two free train rides for persons exhibiting their cars. We need an excess of 35 cars in order to obtain the cooperation of Crossroads Village.

He made arrangements with the Sheraton Motor Inn located at I-75 and Pierson Road with a rate of \$48.00 per night. The Sheraton Motor Inn phone number is 313-732-0400. Persons making reservations should specify that they are part of the Buick Club in order to obtain the \$48.00 rate.

Continued



FOUNDED BY DAVE LEWIS



Bob Jones has made arrangements for a catered dinner at the park similar to the one we had at the national at Indianapolis this last year. The cost would be \$20.00 which would include registration and two meals. If an individual is alone we would have a registration of \$15.00 which would include one meal. Registration costs would include a 50th anniversary commemorative for those persons registered and showing their cars.

We feel that we should include those owners of 37-38 Buicks who are not affiliated with our club and hopefully we should obtain some additional members in this manner. Additionally, we should have an indication from members and non-members by April 1, 1987 their intent to take part in this activity or we might as well forget the whole thing.

One additional item, the Sheraton Motor Inn is located approximately six miles from Crossroads Village and is right on I-75 and Pierson Road intersection. The facility has been used prior to this for a regional Buick Club meet and while security is not provided the area is fenced and probably security would be as good as any place that we could find. We should specify that persons should make their own reservation with the Sheraton Motor Inn and indicate that they are with the Buick Club in order to obtain this special rate.

A considerable amount of effort by Marv and his friends has already gone into this, and I think it is a great plan. There are three things that must be emphasized.

ONE: WE NEED AT LEAST 35 CARS TO MAKE THIS WORK.

TWO: WE NEED THAT NUMBER OR MORE COMMITTED BY APRIL 1 OR IT WILL FIZZLE.

THREE: IF IT FIZZLES, THERE WILL BE NO MORE ATTEMPTS.

The 50th anniversary of 1937 and 1938 Buicks is the ideal time and Flint is the ideal place. In addition to the details set forth in Marv's letter, I am advised that there will be a general car show at Crossroads Village on Sunday, July 19. Anyone wishing to stay over for that will get in free.

I realize that people in California probably will find the distance a bit much. However, there are 15 members in Michigan, 22 in Ohio, 6 in Indiana, 17 in Illinois, several each in western New York and Pennsylvania, and 6 in Ontario, all within a day's drive of Flint. That's about 75 members, and if half have cars that can be driven, trailered or carried, that will do it. And of course there's nothing stopping you if you're further away.

THIS CAN BE A TERRIFIC EVENT, BUT THAT DEPENDS ON YOU.

Please write or call Marv Rhynard before April 1, 1987:

15330 Pinehurst Lansing, MI 48096 517/484-5188

BUSINESS COUPE CONVERSION

I have received inquiries from several business coupe owners who wonder whether any member has successfully converted a business coupe to a sport coupe by <u>fabricating</u> the "opera" seats, hardware, and back panel. The supply of these items from parts cars has dried up. It does not look too difficult to me to make (or adapt) the stuff, but we need some help. If anyone has done this, or thinks he knows how to do it, or can provide photos or dimensions of the parts, please contact the Editor.

ATTENTION CONVERTIBLE OWNERS

We are not by a long shot finished with the subject of convertible top back windows. Indeed, it looks like I really opened Pandora's Box on this one, and all sorts of demons have flown out. What I naively assumed was an obscure corner of the hobby turns out to be the subject of an interest little short of passionate on the part of some of us. I have received a considerable amount of material, including from Jack Shepherd (#138) in Canada, a 15-page "treatise" (his word) accompanied by numerous exhibits. I must admit it floored me temporarily, and I suppose this may be you guys' revenge for the cookie recipe. If so, it has not worked.* Ever resourceful, I have appointed John Steed to the office of Master of Convertible Tops, and have delivered unto him all of the demons. John has agreed to accept the challenge of trying to pacify the demons and order them into neat rows. What will come of this, I do not know, and John has his work cut out for him. I suspect this subject may never be purged of all uncertainty, but I hope that in the future we shall have more useful commentary and guidance. Meanwhile, if you have anything to say about convertible top windows, write or call John.

DECALS; PATCHES

Another run of decals has been ordered, and they will be ready for sale (I hope) around April 1. Especially since repeat orders earn a \$25 discount, enough money was raised from the sale of back issues to cover the cost. One member very generously offered to advance a substantial part of this, but that offer has been declined with thanks. From time to time in the past, people have inquired about hats, jackets, etc. Since the decals sold rather slowly, and since a much larger up-front payment would be required -- which the Club does not have -- I have been, shall we say, cool to these inquiries. However, there is, I guess, no harm in floating up something. Keith Ladderud (#163) has suggested that he might have some cloth patches made if there is enough interest. "I was thinking," he says, "that the patch would be identical to the decal but about the size of the logo on the Roster cover. I would like to hear from the members about

^{*&}quot;Revenge, at first though sweet,
Bitter ere long back on itself recoils."
...Milton, Paradise Lost, Book IX.

this." I think it's a good idea. Please write or call Keith (note his fancy phone number):

Keith Ladderud 21708 SE 291st St. Kent, WA 98042 206/85 BUICK

MODEL 87'S AND SINGLE SIDEMOUNTS

I received an interesting note in January from Mario Ballerini (#097) in Vista, California. It seems that surviving examples of the 1938 Roadmaster Streamline Sport Sedan (model 87) are not as rare as I had thought, at least if one counts four cars as not rare. There are at least three in Southern California. Mario has one, Gary Stafford (Vol. V, No. 1) another, and the third is owned by a gentleman identified only as "Mr. Shubert." Below is a photo of the Shubert car, taken by Mario at the Orange County BCA show last year. Looks nice.



Mario also reported a conversation he had a few years ago with Lee Hopkins (#013) who was then looking for "streamline" cars; at that time Lee mentioned a fourth model 87 in the East. That may be the car owned by one of our newer members, Dr. Ben Birkbeck of Grand Rapids, Michigan (see the story by Bill Vander Hoven in Issue 3). Now, someone in the L.A. area should persuade the mysterious Mr. Shubert to join us.

You will recall my speculation in the last issue about the correctness of <u>one</u> sidemount. Well, folks, that's Mario's Roadmaster: it has a sidemount fender on the left (driver's) side and a plain fender on the right. As far as he knows, that's the way it always was, although at this point it's really

impossible to tell for sure. Mario sent me a couple of Polaroid shots of the car -- at present in gray primer and lovingly referred to as "The Elephant" -- and sure enough, that's how it looks. (Polaroid pictures don't print well especially if taken in low light, as these were.) I have the feeling this is turning into another intriguing mystery. Once these things start, more information has a way of coming to the surface, as the convertible back window business has amply demonstrated. If single sidemounts turn out to be kosher, all sorts of possibilities are opened up. For one, all the people with two sidemounts could share them with the less fortunate who have no sidemounts by giving up one-half of their sidemounts so that everybody could have one sidemount. Of course, half of the people would have 'em on the left and half on the right, which might give rise to its own status conflict. (Left more authentic? Or right?) But we could solve that by creating sidemount "buddies" (remember swimming at camp?) and having each guy switch with his "buddy" every year or two. It would drive the car show judges absolutely bananas! Instead of Seven-wheel Sams, this Super Single Sidemount Switcheroo Scheme would Spawn Some Six-wheel Single Sidemount Sams with Secret Spares to Supplement the Spares you See.

Here come the Men in the Little White Coats! SEE YA!

Bul

BACK COVER. Through the magic of modern printing, we have blown up a 40-year-old sepia postcard. After you've checked the cars, check out the shoes on that lady crossing the middle of Sonoma St.: those heels must be six inches high. The card was mailed in 1949, and was loaned to us by Derek Brown (#621) of London, England. The photo appears to have been taken a year or two earlier than 1949, but I'm not sure: can anyone identify the newest car in the photo? The message on the back, addressed to a lady in "Bletchley, Bucks, England," is, in its entirety, the following:

"Hello, Mumsie - The weather has been wonderful ever since I left Pittsburgh & flying has been good. Am down by the"

Mumsie's little girl must have dozed off while writing, and never realized she had not finished, as there is no evidence of erasure, water damage, etc. Or did she decide not to tell Mumsie what she was "down by" in Vallejo? We'll never know. It cost three cents to mail, and may have crossed the Atlantic on the Queen Mary. But we'll never know about that, either.





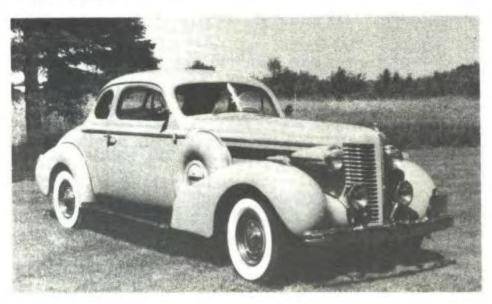
PROUD 1938 OWNER





DON GUST - BEECHER, ILLINOIS

To those of us who attend Buick meets in the Midwest, Don Gust (#043), his '38 Century, his trailer, and a stock of interesting -- if not always beautiful -- stuff for sale, are familiar sights. "The 1938 Century coupe," says Don, "in my eyes, is one of the most desirable and best performing cars of its era. It took me about three years to find one that I could afford. I found it in 1978 in Baltimore -- it was only 70% there -- and towed it back to my home in Beecher (about 30 miles south of Chicago). The pictures show the car in the condition in which I found it, and after it was completely restored in 1980." Don drives to many shows and meets, and last year's BCA National in Indianapolis marked the third time the Century had been around the Speedway track.



IBUICE TORQUE TUBE DRIVE

A LITTLE THEORY AND A LITTLE PRACTICE BY THE EDITOR AND BOB PIPKIN

Those who were members in the first half of 1985 will remember our "Name That Newsletter" contest, the final result of which was the present name of this publication. Among other reasons, "The Torque Tube" was chosen because torque tube drive was a distinctive feature of Buick cars from before 1920. Some people (not necessarily members of this Club) have asked me: "Just what is a torque tube, anyway?" Although it is assumed that all of you have at least a general idea, I thought it would be helpful to have a little review of the principles of torque tube drive. This will be followed by a more technical article by Bob Pipkin (#076) of Salem, Oregon, on assembly and adjustment of the unusual parts that characterize the 1937 and 1938 (and later) Buicks.

First, let us consider the horse and wagon. It will quickly be observed that the source of energy -- the horse -- pulls the wagon forward from an ahead position, and that there are no reciprocating parts and no torque applied to the axles. The wheels do not propel the wagon, the energy applied by the horse may be transmitted to the wagon by a simple joint, and the wagon-maker is free to design the springs (or leave them out) considering only the desired amount of motion-dampening and isolation from road surface.

With a self-propelled machine, things obviously get more complicated. The wheels do not merely roll along. Energy is applied, from within the machine itself, to turn the driving wheels, and this twisting force, or torque, must be transmitted to the remainder of the machine to overcome inertia, friction, wind resistance, etc. and achieve linear motion. The first successful self-propelled vehicle was the steam locomotive. Here the reciprocating motion of the heavy rods and cranks caused problems, and since tracks could not be made perfectly level and straight, the driving wheels and axles could not be attached to the frame with complete rigidity. However, the first problem could be solved by counterweighting the wheels, and tracks are sufficiently level so that extremely heavy leaf springs and semi-rigid joints could connect axles and frame.

The automobile must encounter rough roads, and it is held to the road surface only by friction. In the conventional front-engine, rear-drive layout, the turning rear axle and wheels must propel the car, yet the axle must be free to move up and down at least several inches to provide an acceptably jar-free ride and to stay in contact with the road. The axle must also be maintained in proper alignment perpendicular to the frame and at the correct distance from the front wheels. However, the heavy, stiff springs and frame to axle joints of the locomotive cannot be used.

The usual solution to these problems employed a drive shaft from transmission to rear axle with a universal joint at each end of the shaft, and semi-elliptic leaf springs firmly attached to the axle and rigidly bolted to the frame at their forward ends. In this system, the torque of the turning wheels is transmitted through the springs to the frame of the car. It will quickly be observed that: (1) the rigid connection of spring to frame is necessary, else the proper alignment will be lost and the spring will tend to twist itself off the car; and (2) the design of the spring must be a compromise between flexibility and strength. This system plainly will not work with coil springs, nor very well with transverse leaf springs. It also has several other problems, notably the tendency of the springs to "wind up" and of the wheels to "hop" and lose traction over rough surfaces.

Buick and some other makes adopted a different system, wherein the propelling force of the turning wheels is transmitted, not through the rear springs, but through a connection from the rear axle and differential case, through the transmission case to the engine block and thence through the engine mounts to the frame at the front of the car. This is accomplished by enclosing the drive shaft in a heavy steel tube which is rigidly fastened to the differential housing. The tube is called -- you guessed it -- the torque tube.

The torque tube system has some advantages. As in the 1937 Buick, rear leaf springs need not be rigidly attached to the frame, but can have shackles at each end, giving greater flexibility and transmitting less jar. This allows one U-joint to be used instead of two. And springs can be designed primarily to smooth the ride. "Wind-up" is minimized. Moreover, other types of springs may be used -- most importantly, rear coil springs, which Buick introduced in 1938. It was also thought preferable to apply the propelling force to the front end of the car.

The chief disadvantage is this: there must be semi-rigid joint between the torque tube and the transmission case. This joint must be flexible enough to permit the tube's other end to move up and down with the rear axle, yet strong and rigid enough to transmit the torque of the turning wheels without failure. Reflection will indicate that a ball-and-socket joint is ideal for this. However, since the tube is hollow, enclosing the drive shaft, and since the shaft must have a U-joint at the same location, the ball must also be hollow in order to enclose this joint and allow the shaft to pass through it. Likewise

the "socket" part must allow passage of the shaft into the transmission. The ball-and-socket must also be lubricated, but the lubricant cannot be permitted to run off down the tube. This brings us to that unusual feature of Buicks: the torque ball and its related parts.*

Below is a sectional view of the 1937 large series transmission, torque ball and universal joint. (There are some differences, as one might expect, between the small and large series and between years, but this is a completely representative picture.) It will be seen that the "ball" (on the right) is made up of several parts, and that some of these are in effect the "socket" of my "ball and socket." The hemispherical moving part is bolted to a flange on the forward end of the torque tube, and this hemisphere is firmly held between inner and outer retaining hemispheres. These are fixed to the transmission rear bearing retainer, which itself has a hemispherical shape. (To me, these parts don't look strong enough to transmit all the torque, but obviously the system works, and I'm not an engineer.)

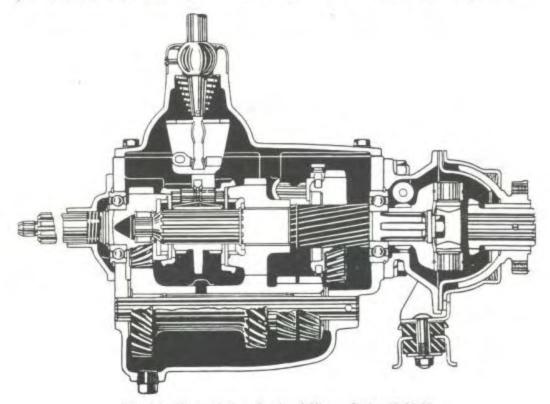


Fig. 7-1. Transmission, Sectional View-Series 60-80-90

Below is an excerpt from the $\underline{1938}$ Shop Manual, which further explains the system.

9

^{*}There is another way to do it with cars having rear coil springs, as many makes have today. A look underneath my 1979 LeSabre, for instance, would reveal a conventional two-joint open drive shaft, with the rear axle to frame connection accomplished through use of two heavy control arms attached to the axle housing and to the frame at approximately the locations that leaf springs would have been. I believe some recent smaller GM cars used a bizzare sort of longitudinal torque arm connecting axle and transmission.

UNIVERSAL AND BALL JOINT ASSEMBLY All Series

(See Figs. 7-1 and 7-2.)

The universal joint is entirely enclosed by the ball drive housing and bearing retainer and is lubricated automatically from the transmission. The front yoke of joint is attached to the transmission main shaft by splines and locked by a cap screw, plain washer and lockwasher. The rear yoke is attached to the propeller shaft by means of splines and is supported in a bronze bushing in the driving ball.

The hardened and ground steel cross is fitted with hardened and ground bushings to prevent wear on pins. The bushings are locked in place in the yokes by snap rings.

On Series 40, lubricant enters ball housing through slot in bearing retainer directly beneath rear transmission bearing. On Series 60-80-90, lubricant is caught by shelf in transmission case and feeds to ball housing through drilled hole in bearing retainer. All series have oil collecting groove around rear end of universal joint bushing. Larger drain back holes used on all 1938 Series allow surplus lubricant to drain back to transmission. The new type ball and bushing may be used on past model cars even though lubricant feed to ball housing is different than on 1938 series.

The driving ball is connected to the torque tube by means of a flange, and is

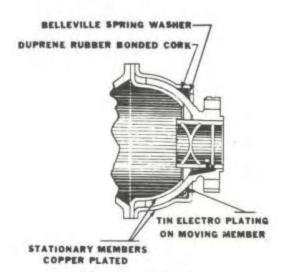


Fig. 7-15. Ball Joint

supported between two copper plated stampings (inner and outer retainers) which are centrally located and bolted to the transmission rear bearing retainer. The ball is plated on both the inner and outer surfaces to prevent scoring during break-in. The driving ball is marked with the word "TOP" to insure correct assembly.

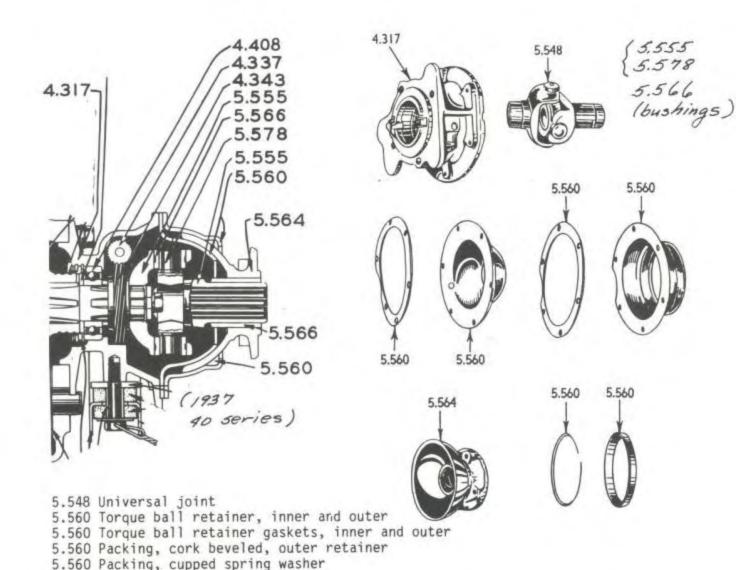
The outer retainer carries a cork oil seal and spring washer that maintains a constant pressure on cork between the outer retainer and torque ball to prevent oil leak. See Fig. 7-15.

Spring washer is slightly cupped to afford tension and should be installed in retainer so that gap occurs between inside diameter of washer and edge of retainer.

ASSEMBLING AND ADJUSTING THE TORQUE BALL by Bob Pipkin

The "torque tube" was used as a means of transmitting power to the rear wheels on Buick automobiles from about 1915 to 1960. It was a strong and reliable method of keeping the rear wheels on the ground during acceleration and braking. It was almost trouble-free as long as everything was tight and lubricated properly.

The most common complaint about the Buick torque tube is the leak at the U-Joint and torque ball. The diagram shows the U-Joint and torque ball bolted together and also an exploded view. The parts requiring attention are identified in reference to the group numbers shown below:



The torque ball must be free from deep gouges on it's inner and outer surfaces. The bronze bushing in the torque ball must be free from deep scores and must fit over the U-Joint without excessive play. The inner and outer torque ball retainers should also be smooth and free from deep scratches and gouges. The U-Joint should be tight in the cross joint. The snout that fits into the torque ball should be free of deep scores. The fit in the bronze bushing should not be sloppy.

5.564 Universal joint torque ball

Assemble the torque ball with "TOP" stamped in the upper position. To adjust the torque ball assembly, remove the cork bevel packing ring. Coat the torque ball, inner and outer retainer in chassis lube or transmission oil. Assemble with a gasket between the transmission and the inner torque ball retainer. Start with one gasket between the inner torque ball retainer and outer torque ball retainer.

Place a six inch dowel in the U-Joint and move the torque ball assembly by hand while tightening the ring of bolts around the outer torque ball retainer. If you cannot move the torque ball with the dowel after the ring of bolts are tight; add another gasket between the outer torque ball retainer and the inner torque ball retainer. When the torque ball is adjusted correctly, with the bolts all tight, you should be able to move the torque ball with the dowel using about 5 to 10 foot pounds of pressure. Add or subtract gaskets to get the correct adjustment.

When you get the correct adjustment, remove the outer torque ball retainer and reinstall the beveled cork packing ring and the cupped spring washer. This cork packing was available in widths of 7/16', 15/32", and 1/2" wide in service packages. Reinstall the outer torque retainer with the correct gasket pack. Move the torque ball with the dowel while tightening the ring of bolts. When all the bolts are tight and beveled cork packing is in place, the dowel should move the torque ball with 15 to 20 foot pounds pressure.

The torque tube radius rods should be tightened evenly so correct tension is maintained on the torque tube. Keep the bolts tight that fasten the torque tube to the rear end housing.

These adjustment procedures differ somewhat from the instructions given in the 1937 and 1938 Buick shop manuals. I have used the 1948 shop manual and various product service bulletins to assemble these intructions. I use these procedures to adjust the torque ball assemblies on all my Buicks.

* * * * *

This is a good place for a tip sent in a few months ago by Mike Adler (#104). "All of a sudden" said Mike, "my transmission ran low on oil and my rear end was overfull. I refilled the transmission and drained some out of the rear end, but two days later the rear end was again overfull. The cause of this condition was excessive clearance between the bronze torque ball bushing and the universal joint yoke." After calling around the country to find a replacement without success, Mike found that his local automotive machine shop could obtain a plain bronze bushing and machine it to the correct size. A byproduct of this repair was the elimination of a vibration problem. (For discussion of potential corrosion of bronze parts by oil additives, see the "Questions" section.)

Before leaving this subject, a few words may be in order about the gaskets and cork packing rings. The gaskets (perhaps shims is a better word) are very thin. These can be duplicated using vellum, a transparent but very strong paper-like material used by artists, and -- obviously -- available at artist's supply houses. The cork packing rings are a bit more difficult. These must be sought at swap meets and the like. However, Bob says that it is frequently possible to re-use the old ones if the parts are disassembled with care. Indeed, disassembly with care is a good idea for any old car project.

A WORD OR TWO ABOUT OUR AUTHOR. "Bob" Pipkin (whose real first name is William) is well known to many of us, by his works if not personally. Bob started off many years ago racing straight-8 Buicks and beating the pants off Olds 88's. Gradually he moved from racing toward more conventional restoration. However, he is not a "purist," and typically modifies his cars in ways that are not readily detectable but which improve performance and reliability. Bob has owned at least 25 Buicks, including eight 1937 or 1938 Centuries, and has contributed numerous articles and tips to the Club, as well as giving freely of his time and knowledge to help countless questioners.

TORQUE BALL & U-JOINT PARTS from 1928-1946 Master Parts Book

PLEASE NOTE. Some of the parts listed superseded parts with different numbers as listed in the 1938 book. Since it seems more likely that the later-numbered parts would be found today, we have used the lists from the 1946 book. Please write to the Editor with SASE if you want a copy of the 1938 parts book pages.

					12/22		A Allera American
4.317 RETAINER,			rear bearing 1931-50: 1931-50 (After transmission	1304611	3.15	1	1938-40 (Front) For self-shifting transmission
			2606648 on LHD; 2609521 on RHD)	1304612	3.45	1	1938-40 (Rear) For self-shifting transmission
1240626						1.00	and the same of th
1256365				5.560 RETAINER,			CONTRACTOR CONTRACTOR
1273604				111777		1	1934-35-36-40 (Outer)
			1933-80-90; 1934-38-90	1293428		1	1934-35-36-37-40 (Inner)
			1934-35-40 1934-35-60	1301600	2.00	1	1936-37-38-60-80-90; 1939-80-90;
1278974	4.60		1936-40				1940-60-70-80-90; 1941-42-60-70-90;
1293613				120,000			H1942-60-70; 1946-70 (Inner)
	3.45		1938-40 (for conventional trans.)	1394085			1936-60-80-90 (Outer)
1303228			1938-40 (LHD) For self-shifting trans.		1.40		1937-38-40; 1940-41-42-40-50;
1302234		1	1938-60-80-90	1323289	1 55		H1942-40-50; 1946-40-50 (Outer) 1937-38-60-80-90; 1939-80-90;
	3.45		1939-40	*****************	1.00	*****	1940-60-70-80-90; 1941-42-60-70-90;
1308129		1	1939-60				H1942-60-70: 1944-70 (Outer)
1393003			1939-80-90; 1940-60-70-80-90;	1301440	1.75	1	1938-40; 1940-41-42-40-50; H1942-40-50;
-	4		1941-60-70-90; 1942-90 up to frame 14345541				1946-40-50 (Inner)
1312399	2.45	1	1940-41-40-50; 1942-40; H1942-40;	1309449			1939-40-60 (Inner)
	0.40		1946-40	/5 900\ 180078	2.13		1939-10-60 (Outer)
1321858	3.45	1		(8.900) 180078		*****	1934-35-40; 1936-37-38; 1941-42;
1323277		1	1942-60-70-90 after frame 14345541 on	(8.900) 180081			H1942: 1946: Bolt (18x%) 1937-38-60-80-90: 1939-80-90: 1940 to
			90; H1942-60-70; 1946-70	(0.000) 180081			1946 inclusive: Boit (%"-18x1%")
5.548 JOINT, Uni	warra!			5.560 PACKING	¥	half	in minimum
1 168607		1	1925-26 Std. 6: 1927-28-115: 1929-116:	11285529			1934-35-40: 1936
	-		1930-40; 1932-33-34-35-50-60				(3) "x4 % "x % "—cork)
1241303	14.40	1	1931-60; 1931-50 (After transmission	1299001	.23	1	1937-38: 1939-80-90; 1940 to 1946
animonic siperior			2806648 on LHD, 2609521 on RHD)				inclusive (Optional with 1306940)
1288621	9.20	1	1934-35-36-37-40				(-1-x-1-x4-1-"-cork)
1396389	10.35	1	1936-37-60-80-90	1306940	.23	AR	1938; 1939-80-90; 1940 to 1946 inclusive
1302132	9.20	1	1938-40 (for conventional transmission)				(Optional with 1299001)
1303239	9.20	1	1938-40 (for self-shifting transmission)				it "x 'a "x4-h" cork
	10.35	1	1938-80-80-90; 1939-80-90	1299002	.12	I	1937-38; 1939-80-90; 1940 to 1946
1309468	9.20	1	1939-40-60	The second second	7.5	10.00	inclusive: Washer, Spring
266374	9.20	1	1940-41-40-50; 1942-40; H1942-40; 1946-40				(314 - I.D. x 414 - O.D.)
246377	10.35	1	1940-60-70-80-90; 1941-60-70-90;	5.560 SHIM, Torq	ue ball	retaine	
			1942-90 up to frame 14345541	1285744	.03	++AR	1934-35-36-37-38-40; 1940-41-42-40-50;
267663	9.20	1	1942-50; H1942-50; 1946-50				H1942-40-50; 1946-40-50
267665	10.35						(.004~006~ thick)
				1289575	.03	AR	1936-37-38-60-80-90; 1939-80-90;
(8.900) 181637			H1942-60-70; 1944-70 1939-40-60; 1940-41-42-40-50;				1940-60-70-80-90; 1941-42-60-70-90; H1942-60-70; 1946-70
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			H1942-40-50; 1944-40-50; Bolt				(.004"006" thick)
			(% -24x1")	1309464	.03	AR	1939-40-60 (.004*006* thick)
(8.900) 181696		1	1939-80-90: 1940-60-70-80-90;	1310081	.03	AR	1939-40-60 (3 thick)
			1941-42-60-70-90; H1942-60-70;				
			1946-70: Bolt (1/4"-20x1")	5.564 BALL, Unit	rersal je	oint ton	que
			To transmission main shaft	1253333	4.60	1	1925-26 Std. 8; 1927-28-115; 1929-116;
5.555 YOKE, Unit	versal jo	thic					1930-40; 1931-60; 1931-50 (After
			1929-116; 1930-40; 1932-33-34-35-50-60 (Front)				transmission 2606648 on LHD; 2609621 on RHD; 1932-33-34-38-50-60
215837	4.60	1		1247642	5.75	1	1928-120-128; 1929-121-129; 1930-50-60;
			(After transmission #2606648 on				1931-32-33-80-90; 1934-35-90
			LHD. #2609521 on RHD);	1303033	4.30	1	1934-35-36-37-40; 1938-40
			1932-33-34-35-50-60 (Rear)				(For conventional transmission)
215834	4.60	1	1929-121-129; 1930-50-60; 1932-33-80-90;	1301574	4.60	1	
	1-31-3-		1934-35-90 (Front)	1303244	4.30	1	1738-40 (for self-shifting transmission)
215835	4.60	1	1929-121-129: 1930-50-60: 1931-32-33-	1308308	2.90	1	1939-40-60
			80-90; 1934-35-90 (Rear)		4.30	1	1940-41-42-40-50; H1942-40-50;
1286608	3.15	1	1934-40 (Front)				1946-40-50
1286609			1934-40 (Rear)	1312409		mark.	1940-41-42-60-70; H1942-50-70; 1946-70
1288616	3.15	1	1935-36-37-40 (Front)	1314581	4.90	1	1946-80-90; 1941-42-90
1288617			1935-36-37- 38-40 (Rear)	(3.900) 181593		6	1939-40-60: Boit (1-24x%") To rear torque tube
			FOR COnventional transmission				To tree market
1293392	3.75	1	For conventional transmission 1936-37-38-60-80-90; 1939-80-90 (Rear)				

13

For conventional transmission

5.566 BUSHING.	Universal joint	torque ball
1411444 213593	1.601	1929-116; 1930-40; 1931-60; 1931-50 (After transmission ±2606648 on LHD; ±2609521 on RHD); 1932-33-34-35-50-60
213596	1.751	1929-121-129; 1930-50-60; 1931-32-33-80-90; 1934-35-90
1301439	1.151	1934-35-36-37-38-40 (1.339" I.D. x 1.6577" O.D. x 1\(\frac{1}{12}\)")
11301607	1.151	1936-37-38-60-80-90; 1939-30-90 (1.465" I.D. x 1.849" O.D. x 1+4")
1303246	1.151	.1938-40 (for self-shifting transmission (1.465* I.D. x 1.849* O.D. x 114*)
1312410	1.001	1940-41-42-40-50; H1942-40-50; 1946-40-50 (1,465° LD, x 1,849" O.D. x 1,4")
	1.151	1940-41-42-60-70; H1942-60-70; 1945-70
1314682	1.301	1940-80-90; 1941-42-90 (1.465" I.D. x 1.349" O.D. x 1-4")
(8.939) 141358	N.S1	1933-34-38-36: Pin. dowel (14"x+")
(8.939) 141357	N.S1	1940 to 1946 inclusive; Pin, downl (%~x%") To torque ball

S.SEE BUSHING, U	niversal join	
215839.	.454	1929-118; 1930-40; 1931-60; 1931-50
		(After transmission #2606648 on
		LHD: #1609621 on RHD):
		1932-33-34-35-50-60
215838	.45	1929-121-129: 1930-50-60:
A STATE OF THE PARTY OF THE PAR		1931-32-33-80-90; 1934-35-90
1286611	.354	1934-40
1288419		1938-34-37-38-40
1293393		1934-37-38-60-80-90; 1939-80-90
404829		1939-40-60: Bearing.
5.578 CROSS, Unit	and laint	
1284610		1 1934-40
1288618		
1293387	2.30	1 1930-27-28-00-30-10, 1939-00-10
5.586 LOCK, Unive	ersal joint bu	ahing
215840	.02	1929; 1930-40-50-60; 1931-60-80-90;
		1931-50 (Aftertransmission #2606648
		on LHD; #2609521 on RHD);
		1932-33: 1934-35-50-60-90
1288620	.12	
11293394	.12	
	144.	o state to be a second fine to to.



NEW MEMBERS



NEW MEMBERS

William Schaeffer #622 2681 Riverside Dr. Costa Mesa, CA 92627 714/631-1912 '37 67

John Huffman #623 P.O.Box 614 Clemson, SC 29633 803/287-4552 '37 81

Hans Kirpestein #624 Dorskampweg 5 Wageningen 6704 PB NETHERLANDS '37 660 Al Mason #625 RR # 1 Schomberg Ontario LOG 1TO CANADA 416/936-4491 '37 66C McL.

Byron Anshus #626 164 Crestview Dr.: Orinda, CA 94563 415/254-4518

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Ben Gostanian #255 5059 N. Van Ness Fresno, CA 93711

Joe Giordano #333 131 N.Stewart Rd. Liberty, MO 64068

NEW ADDRESS

John Beagle #278 P.O.Box 1057 Nth.Sydney NSW 2060 AUSTRALIA

Richard Buteau #015 795 Ivory Rd. Rio Rancho, NM 87124

ANOTHER SPECIAL WELCOME. Our international membership continues to grow, and this month we welcome Hans Kirpestein of The Netherlands -- sometimes known unofficially as Holland. It must be particularly difficult working on an American car outside the English-speaking nations, and although Hans has a good command of English, he deserves our congratulations and support.



CHROME WHEELS

Within two weeks of one another, Tom Schuttish (#006) of San Francisco and Pete DiPasquale (#352) of Wyckoff, NJ called my attention to an intriguing 1937 and 1938 option: chrome-plated wheels. Yes, you read it correctly, folks: flashy, sparkling chrome wheels are <u>authentic</u>! My first reaction to this was that Tom, a tax lawyer, had been reading too much fine print in the new federal tax law, and was, as they say, "seeing things." But when I looked it up, there it was -- in black and white, as they say -- in the Master Parts Book. Pete sent me some pages from a 1937 prices and accessories book that also show very clearly a chrome wheel option. The listing from page 129 of the 1928-1938 Master Chassis Parts List follows:

3/10

BUICK MASTER PARTS LIST



SECUP DO. PART DO.	LIST PRI	CE PER	tan .	MODELS A	BB DESCRIPTION	OROUP NO. PART I	e. LIST	PRICE	PER CAR MODELS AND DESCRIPT	100
5.803 WHEELS, F	Front as	d reor	(steel sp	okes)		1299011	9.50	4		
Section Street, Section 1997			a charter		to net price of prime	1300850	18.50	4	1937-80-90 (Chrome plated dis primed rim)	c and
wheel.						1300866	25.00	4	1937-80-90 (Full chrome plated	4)
						1303945	9.50	4	1938-40 (Primed)	
*	*		*	*	*	1306120	18.50	4	1 1938-40 (Chrome plated disc at rim)	nd pr
1298989	9.50	4	1937-40	(Primed)		1306119	25.00		1938-40 (Full chrome plated)	
1300848		4	7.773 304		lated disc and primed	1303946	9.50		1939-60 (Primed) '	
The state of the series			rim)		Control of the contro	1306122	18.50	4	1938-60 (Chrome plated disc at rim)	nd pr
1300864		4			me plated)	1306121	25.00	4		
1299010		4		(Primed)			9.50			
1300849		4	rim)		lated disc and primed me plated)	1303947	0.0000			c and
1300865	25.00	4	1421-00	(Fun caro	me piated)	1306123	25.00		1938-80-90 (Full chrome plated	d)

You will note that three different wheels were available: painted; chrome center ("disc") with painted rim; and fully chrome plated. The difference in price in 1938 dollars was considerable. The DiPasquale material, however, shows a price difference of only \$18-22 per car between painted and chrome wheels. I suppose the latter reflects factory installation, whereas the Parts Book gives an over-the-counter "list price."

Now, before all of you race out to jack up your cars, a few words of caution. First, I think that wheels would be very difficult and expensive to plate, at least without taking the rim and disc apart (they are riveted together). A wheel that is pitted would present even greater difficulty. Second, I urge anyone contemplating plating to consider carefully, and try to visualize, what the car will look like when he is done.

Having thought about it for some time, I have concluded that body style and color would make quite a difference. A convertible or sport coupe in a dark color could, I think, carry full chrome wheels rather well. The chrome disc with painted rim combination would seem to fit a wider variety of styles and colors. Some of you will doubtless think the whole business is too close to Streetrodsville for comfort, and I suspect few if any of us will try it. But there it is. However one's tastes run, one thing must be said for chrome wheels: they eliminate all wheel-stripe painting problems in one stroke.

1937 GARNISH MOLDINGS

In previous issues (Vol. IV, No. 8, pp. 25 & 26 being the most recent) we said that treatment of garnish moldings in 1937 80 and 90 series cars varied depending upon the upholstery. This is the clear import of <u>some</u> 1937 literature. There were three styles: mahogany (woodgrain); black; and gray. The material I received recently from Pete DiPasquale*, however, states that the combination of moldings and upholstery color was completely optional.

"Choice of the following garnish moulding colors on all 80 and 90 series models, except 80C convertible which is furnished in chrome only: Mahogany; Black; Lustre Light Grey." (Emphasis added.)

I suppose the appropriate conclusion is that the factory had a "standard" way of doing it on cars not made to particular orders, but that where a '37 Roadmaster or Limited was ordered the customer could combine the available upholstery colors and fabrics with the three molding treatments as he wished.

Now, does any member know what "Lustre Light Grey" is? In particular, is it the same as the dash color we have previously described as "fawn"?

CONVERTIBLES: TOP COLORS

The consensus among several members who wrote to the Editor about this, as well as the import of available literature, is that combination of top color and body color was completely optional. Although the overwhelming majority of original tops were -- it appears -- tan, there were two other colors: black and "blue-grey." According to Paul Cusano (#052), who has made a thoroughgoing study of authenticity over several years, the latter was a "pebbly" or "tweed-like" fabric -- perhaps something like a "tickweave" clothing pattern. One assumes the fabric combined blue threads and grey threads. (I know of no duplicate of this made today, but a custom top firm might come up with something.)

^{*}This material, consisting of two pages, is not of sufficient legibility to survive offset printing in presentable form. Any member may obtain a readable if not beautiful copy by writing to the Editor with SASE.

Here again, it seems reasonable to assume that the factory had a standard way of combining top, upholstery and body colors on cars not made to particular orders, but that a customer ordering one could have whatever combination he wanted. The majority of convertible coupes and virtually all convertible sedans were probably made to order.

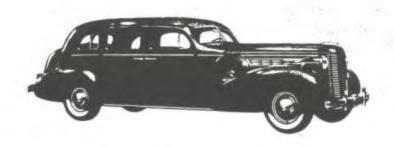
CONVERTIBLES: UPHOLSTERY

It may be worth nothing that convertibles had different upholstery options than did closed cars. While some fabrics could be had in both, mohair -- to cite one example -- was not used in convertibles, and in 1937, 40 and 60 series convertibles had a fabric unique to them: "Brown Novelty Cloth" (No. 338). Does anyone know what this looked like? Many convertibles had leather upholstery. Again according to Paul Cusano, the original leather appears to have had a grainy finish -- something like "Scoth grain" shoes -- and the best duplicate of this available today is Bill Hirsch "antique grain." (This use of the word "grain" to describe leather must be distinguished from "top grain" which refers to quality but not to finish or texture.)

SIDEMOUNT COVER PARTS

Below is an excerpt from the 1928-1938 Master Chassis Parts Book covering miscellaneous sidemount cover parts. It is unlikely that any of these can be found today; indeed, I am not even sure what is meant by "Shield and Welt." For completeness, however, I thought it should be added as a postscript to the "Sidemount Fever" article. I discovered this quite by accident while looking up something else. It is found between the listings for "Hose, heater" and "Switch, car heater." The book has a logic all its own and it is often extremely difficult to find things in it.

8.848 CLIP, Tire cover back ring spring	8.849 SHIELD AND WELT, Tire cover
1286525 .101-2 1934-35-40 1285195 .051-2 1934-35-50	
1285196 .051-2 1934-35-60-90	
8.848 FASTENER, Tire cover side molding to plate	
	1395862 1.152 1936-80-90 (Left front and right rear)
	1396177 1.002 1937-38-80-90 (Right front and left rear)







GUIDE FOG LAMP

For Safe Night Driving in Any Kind of Weather - The Leader in . . . Appearance - Construction - Performance

The new and improved Guide Fog Lamp is designed to enable passenger and commercial vehicles to travel at night in fog, sleet or snow with maximum road visibility and safety. Its penetrating amber ray provides better illumination than the ordinary headlamp beam in fog or storm. Hazardous reflection from moisture particles is eliminated by correct distribution of

the powerful beam of the Guide Fog Lamp, by means of the special optical lens, prefocused bulb and

special bulb shield.

The silver-plated mirror reflector of the Guide Fog Lamp multiplies the bulb candlepower many thousand times and the lens distributes this powerful beam with the proper light pattern to prevent glare and insure maximum illumination for inclement weather driving.

The installation of two lamps is strongly recommended. In heavy fog, both fog lamps should be turned on and headlamps switched off for best possible results.

Heavy brass construction is used in the Guide Fog Lamp, with steel reinforcing plate, insuring dependable service and long life on trucks, buses and passenger cars. The body and door are chrome-plated and the mounting bracket is finished in black enamel.

The special mounting bracket has a 360 degree rotation feature, which permits turning in any direction, to avoid interference with fenders, bumper guards or radiator grilles. The lamp can be mounted above or below the bumper as desired.

Included in the fog lamp package is a heavy duty push-pull switch with a clamp-on bracket. The improved design of the switch eliminates the possibility of short-circuiting.

Guide Fog Lamp is furnished complete with bracket, switch, extra long weatherproof cable and detailed installation data.

Packed individually—weight 512 pounds. Standard shipping carton contains six (6) lamp packages.

GUIDE BOOSTER BEAM DRIVING AND PASSING LAMPS



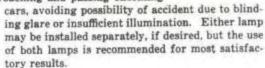
No. 921672 Price \$5.50

DRIVING LAMP No. 921750 Price \$5.50

Night driving with day-time safety is possible with Guide Booster Beam Driving and Passing Lamps. These lamps can be operated in conjunction with the "driving" and "passing" beams of the regular headlights and may also be operated independently by separate switches provided with each lamp.

The driving lamp throws a concentrated controlled beam down the highway, picking out turns, signs or possible obstructions, beyond the range of the headlamps.

The passing lamp lights up the right-hand side of the road clearly when using lower beam of headlamps in approaching and passing oncoming



The Booster Beam lamps are of the same quality and rugged construction as the Guide Fog Lamp. shown above. They are also provided with the same 360 degree universal mounting bracket, switch, extra long waterproof cable, and complete installation data.

Packed individually—weight 5½ pounds. Standard carton contains six (6) lamp packages.





PASSING LAMP No. 921751 Price \$8.50





TECHNICAL TIPS



MISCELLANEOUS STARTER LORE

- (1) WATCH THOSE SCREWS. Your Editor was having some starter trouble. Through the generosity of a fellow member, I received a 1937 40-series starter that had been installed on a 60-series car. (This doesn't work well for at least two reasons: (1) it doesn't have enough torque; (2) it chews hell out of the drive gear.) This "new" starter had a strange-looking solenoid, but I did not care since I had a nice rebuilt one I'd bought from Dave Lewis. My good ol' friend Bob the Auto Wizard said he'd rebuild the "new" starter and he did: tested it (without the solenoid on top) and it ran great. So we put on the rebuilt solenoid using four new cap screws, and I put it all in the car (not too easy: see next item), and wired it up. Got in the car, ready for that satisfied smile. No smile! Solenoid clicked, but starter would not turn. Checked wiring; charged battery; no improvement. Starter came out of car (also not too easy) and I went back to the Wizard, indignant. To avoid too windy a report on what is, after all, not a broad-scope subject, we puzzled awhile before finding the problem: those new cap screws securing the solenoid bracket. Too long. You must attach the solenoid with screws no longer than 3/8" or one of them will short out the coil. No kidding. We'd used 1/2-inch screws, and when these were replaced by 3/8-inch, she spun like crazy. If you use the original screws, everything will be fine. If you lose them, like Bob and I did, be careful what you grab out of the jar of screws. This story probably has several moral lessons, but I'm not sure what they are.
- (2) TAKIN' 'EM OUT. For once, I planned a job out right and decided correctly that the longest way 'round is the shortest way home. They're heavy: probably 30 pounds. If you are (a) weak and flabby, or (b) short, or (c) have anything even close to a bad back, don't try to take a starter out over the fender: do it my way. The starter is held in place by two bolts: one must be reached from below and one from above. Forget your socket wrench: not enough clearance. A 5/8 box wrench does it. OK, now, (a) remove the breather pipe, which you must do to (b) remove the splash pan. When you crawl under after the splash pan take some penetrating oil with you and squirt the lower bolt. Come back and squirt the upper bolt. Disconnect all wires and the ground strap, after noting carefully which one goes where. Have coffee. Using box wrench, remove upper bolt. Crawl back under car, with wrench. Loosen lower bolt until you can turn it with fingers. Support starter with one hand, remove bolt with the other, then take it out with both. If you position yourself correctly, it will fall on your fat gut if you lose your grip, and won't even be scratched. Place starter on heavy piece of cardboard or canvas you have conveniently put under car. Crawl back out and slide out the cardboard or canvas with starter on it. Have more coffee. Take bath.

- (3) LONG AND SHORT. It has just occurred to me that the essential information in the two preceding entries could have been done in two sentences. One: Do not use screws longer than 3/8 to attach a starter solenoid, as longer screws will short the coil. Two: It is easier and less physically taxing to take starters out from under the car, although the splash pan and breather pipe must first be removed to do so; socket wrenches cannot be used to remove the attaching bolts. That sounds awfully dry, doesn't it? I like the anecdotal, conversational way better, even if it does take more space. Gives things a personal touch. And principles are more easily remembered if they have a little story around them. Unless, of course, you knew them already or don't give a damn. Well, if you want a shorter-winded editor, throw me out.
- (4) MORE OOMPH. Much of the collective Petulance of Old Buick Owners appears directed at the amount of time the starter must be run before the engine fires. This has been discussed before. There may be different causes. The most common cause is no gas in the carburetor float chambers: over time it dribbles out into the manifold or seeps out through a very slightly porous casting and evaporates. A certain time is required for the pump -- operating, remember, at only about three pounds pressure -- to move enough gas to fill the float chambers. It follows that if the starter can be made to apply more torque, the engine will crank faster and the gas will get up there sooner. One way to do this on a $\underline{1938}$ 40-series car is to install a large engine starter (Delco-Remy 727-W). Another way, which will work on all cars, is to have your starter rebuilt with all new high-torque windings. This work can be done expertly by Ron Lekse of RBR Electronics, the author of the "Generators and Regulators" article in Vol. IV, No. 8. Average cost might be \$25 in addition to the cost of rebuilding the starter which, assuming no unusual problems, averages \$85 to put the starter in like-new condition. Assuming all your grounds and the rest of your electrical system are good and your engine is in proper tune, this starter "upgrade" will insure quicker starts, and original appearance will be unchanged. The price may seem high compared to your local A-1 Auto Electric. Several conversations with Ron indicate to the Editor, however, that he knows his business thoroughly and you will get an absolutely first-class job. And no one else I know about can perform the high-torque modification with particular reference to the requirements of pre-War Buick electrical Systems.

Ron Lekse RBR Electronics 460 East 319th Street Willowick, Ohio 44094 216/585-7178

(5) THE GENERATOR MAY BE AT FAULT. Speaking about the "starter control mechanism," the 1937 and 1938 Shop Manuals state: "The generator windings are used for completing the control circuit to ground." This is part of a system for ensuring that the starter cannot run when the engine is running, the other parts being the vacuum switch and the cut-out relay. "Inasmuch as there are conditions under which the engine vacuum is not sufficient to open contacts of the...switch..., the contacts of the solenoid relay are caused to open also by the

generator" (1937 Manual, page 185, sec. 12-3). If the starter will not turn, it should thus be borne in mind that the trouble may be in the generator rather than the starter. Bad brushes and/or commutator may prevent a good ground for the solenoid, thereby also preventing completion of the circuit. The cut-out relay (in the black box with the voltage regulator) should also be checked.

(6) EIGHT-VOLT BATTERIES. Over and over, I hear or read adulations by various people about 8-volt batteries. Over the past several months, I have read as much as I could conveniently find about this subject, and discussed it with Ron Lekse (see above) and Dave Lewis. The claimed virtues of the 8-volt battery are that one gets faster cranking and brighter lights (albeit, everyone concedes, shorter bulb life). These batteries were originally produced for commercial delivery vehicles that made short runs at low speed, were maintained sporadically, and had batteries in hard-to-reach locations. They were never intended for use with electrical systems -- such as the '37-'38 Buick system -- employing three-brush generators. Based upon my research, I have come to this conclusion: anyone who thinks he can just plop an 8-volt battery into his car and roar away is kidding himself and will come to grief. Sooner or later you will burn out your generator and your voltage regulator, and maybe your points and your coil. The Buick three-brush generator and voltage regulator can probably be modified to work with an 8-volt battery, but this is a job for someone who knows what he's doing. Alternatively, electronic devices can be installed which will drop everything to six volts once the engine is running. In the Editor's opinion, such things are plainly not worth doing, and my advice to everybody is:

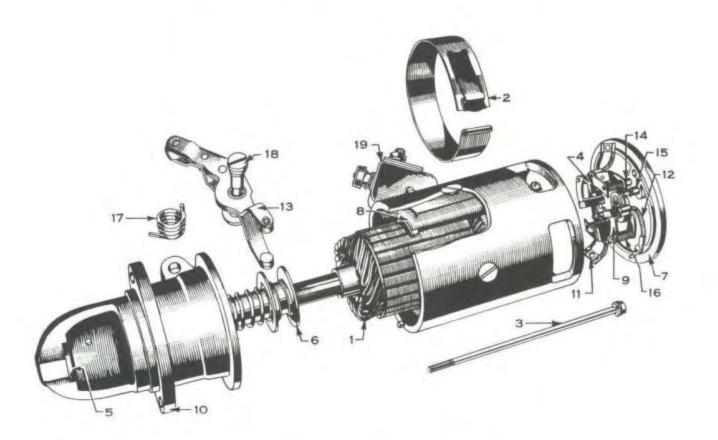
FORGET ABOUT 8-VOLT BATTERIES!

It is far saner and safer, in my view, to (1) get a good 6-volt battery; (2) get a good 6 & 12 volt home battery charger and use it -- a fully-charged, powerful 6-volt will perform better than a half-charged 8-volt; (3) put your starter in good condition, with or without the winding modification discussed above; (4) put the rest of your electrical system in good condition. Beyond all this: try, try to refrain from expecting a 50-year-old car to perform exactly like a modern car. (For more about 8-volt batteries, pro and con, and electronic modifications, see the following recent issues of Skinned Knuckles: Feb. '86; April '86; June '86 or write Editor with SASE for copies.) I recently put into my car a Delco 417A battery: this has 475 amps* cold cranking capacity at zero degrees F, and just fits the 1937 40-series battery carrier. It cost me less than \$40. Plainly a better battery than anything available in the 1930's. I'm sure a comparable battery can be found for 1938's.

^{*}This is only slightly less capacity than the 12-volt battery in my 1979 LeSabre with 301 V-8, and well within the range covered by the majority of modern car batteries. So, tell me, what's wrong with 6-volt batteries?

by Pearl S. Buck (a popular author in the 1930's), but am playfully using the British term for the "ground" of an electrical system. (That's right, folks, if one's Lucas lamps don't work one may have a bad "earth." It's really no sillier than "ground" though, is it?) As stated above, it is important to be sure that the ground connections from battery to frame and starter to frame are clean, free of rust, and tight. Poor grounds may cause loss of battery power and diminution of starter performance. (See Vol. IV, No. 9, page 11.) Ron Lekse suggested to me the use of silicone dielectric compound on these connections. You can buy this stuff at any good auto parts store. It is fairly expensive -- maybe \$5 or \$6 for a small tube -- but you don't need a lot. It prevents corrosion while being electrically conductive, which petroleum greases obviously are not. It is also very useful in light bulb sockets for preventing formation of that greenish stuff which, if allowed to grow for too long, will black you out.

TYPICAL 1930'S AND 1940'S DELCO-REMY STARTER (from the 1928-1938 Master Parts Book -- this is not an exact representation of 1937-38)



NOTE: In this illustration, the pinion or drive gear is obscured by the gear housing.

(1) Armature (820158-60, 80, 90; 823881-40).

(2) Cover band. (3) Through bolt.

(4) Brush (modern replacement obtainable).

Gear housing bushing (810620-60, 80, 90; 1839345-40).

Drive clutch (1843041; 1874156). (6)

End frame (has cast iron end bearing & wick oiler).

(8) Field coils (826281-60, 80, 90; 2 coils L.H. 826282-60, 80, 90; 2 coils R.H. 812699-40; R.H. 812700-40; L.H.).

(9) Brush holder. (10) Gear housing.

(11) Insulated brush lead.

(12) Brush ground lead.
(13) Shift lever and yoke.

(14;15) Brush arm pins.

(16) Brush springs.

(17) Shift yoke spring.

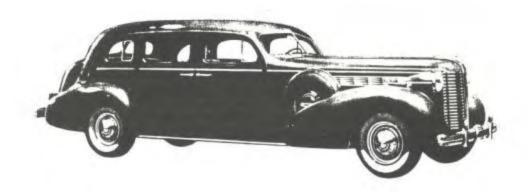
(18) Stud.

(19) Switch (1937 & 1938-mounted on solenoid).

NOTE: Complete solenoid & switch assembly is Delco-Remy 1542. Center bearing plate with bushing is Delco-Remy 820149-used on 60, 80, 90 series only. Part numbers are given above for parts more often sought after at swap meets.

The shift lever is attached to the solenoid, which is mounted atop the starter motor case. Operation of the solenoid plunger will push the drive clutch and gear forward, engaging the flywheel ring gear. The over-running clutch protects the armature and bearings from running at excessive speed during the period after the engine fries and before the drive gear disengages from the flywheel. The springs return the solenoid plunger to the "off" position once current has been shut off through the control circuit (see previous discussion).

All of the foregoing is intended to supplement, not substitute for, the discussion in the Shop Manuals, which should be read for a complete understanding of the operation of the starter and related electrical circuits.





QUESTIONS



QUESTION. I have heard that 1937 water pumps were of two types from the factory: one in which the shaft runs in a bushing, and another in which ball bearings are used. Supposedly, the only way to tell the difference is to take the pumps apart since the housings were identical. Can you shed any light on this?

What you have heard is half fact and half ill-founded rumor. According to the 1928-1946 Master Chassis Parts Book, water pump design was changed during the 1938 model year, following engines 4-3535259 (40 series) and 3486434 (60, 80 and 90 series). The 1937 and 1938 Shop Manuals describe pumps with permeable bronze bushings that were lubricated from a three-ounce oil cup on top of the housing. These bushings were sufficiently porous that they could be impregnated with a light (10W) motor oil. Readers of the Shop Manuals will note they are emphatic that no oil heavier than 10W be used for water pumps. This design apparently proved unsatisfactory, quite possibly because too many owners or mechanics failed to heed this advice, and did not fill the oil cup correctly, or used a heavier oil which would not permeate the bushing, or no oil at all. In 1938 a ball bearing pump design was substituted. Which pump you have can be quickly determined by noting the presence or absence of the external oil cup -- the ball bearing pump does not have it. We think there are few, if any, of the bushing-type pumps left. If you have one of these, it is a good idea to follow the lubrication instructions carefully, or to find a later-style pump and substitute it, which is considered completely acceptable restoration. The ball bearing pump, its parts, disassembly and repair, overhaul kits, etc. are described at greater length in Dealer Service Bulletins BPS 2.84, 2.025 and 2.026 which appeared in Volume III, No. 8 of the TORQUE TUBE (June 1985). Copy on request to Editor with SASE.

QUESTION. My car slips out of second gear, and occasionally out of third. This happens when I take my foot off the gas pedal, or when going downhill in second. Sometimes it is difficult to shift into second. What is the cause, and where can I obtain the parts needed to cure this problem?

ANSWER. You have the typical symptoms of worn synchronizers in the transmission. Synchronizing units are made up of sliding sleeves, drums, springs and bronze cones. In many cases these parts can be reconditioned, and new parts are not necessary. It is suggested that you look for an old, established transmission

Technical Consultant~ Dave Lewis

and rear end specialist in your area or a shop that does heavy repairs or works on trucks. (Not the corner gas station; not Aamco. For example, there is a firm in Columbus, Ohio called Goodale Transmission that has been in business for decades, and I have no doubt that Tommy Goodale could fix any '37 or '38 Buick transmission.) If parts are needed, Dave suggests this source:

Antique Auto Parts 449 West Main Street Waterbury, CT 06702 203/755-0118;

there are also vendors who advertise in <u>Hemmings</u>. The hard part is taking the transmission out of the car. The 1937 Shop Manual states that the gears, etc. may be removed from the case without removing the case from the car. Dave thinks a '37 transmission could be removed without taking out the rear axle, by disconnecting the torque ball and U-joint and then pushing the springs back a bit on their shackles. Having thought about it, the Editor has concluded that one is probably better off in the long run taking the axle out first, along with the torque tube, and then removing the whole transmission. On 1938 cars, that is what the Shop Manual instructs. Before leaving this subject, the Editor will renew his recommendation that modern extreme-pressure (EP) gear oils not be used in transmissions because of the potential corrosive effect of the additives in these oils on bronze and brass parts. To obtain the old-style oils (API Service GL-1 or GL-2), look for a dealer handling Fiske lubricants, or write to:

Shaffer Specialty Auto 3534 Via Ventada Escondido, CA 92025 619/747-0853

Bob Pipkin says he has never observed any failure or corrosion of brass or bronze transmission components caused by EP gear oils, and Bob has owned and taken apart many Buicks. Other respected authors (notably the technical editors of <u>Skinned Knuckles</u>), however, have cautioned against use of these oils in pre-War transmissions. The Editor feels that, so long as the old-style oil is available and works OK in normal use, it is better to use it. You may, as the man said, take your choice.

QUESTION. We have established the colors of the major engine components. How about all the various bolts and nuts -- were they painted or plated?

ANSWER. There is some difference of opinion between Dave and the Editor as to whether the engines were painted after most assembly was done or whether the individual components were painted separately before being put together. The answer to this question would tend to suggest the answer to the bolts-and-nuts question; unfortunately, however, we really don't know. The Master Parts Book lists numerous bolts, nuts, machine screws, etc. (Group No. 8.900). Most of these are listed as "Cad." which we assume means "cadmium plated," and a sampling of the book's entries

for some engine components (e.g. water pumps) indicates that they were attached with "Cad." bolts. Since there would seem to be no reason to use plated bolts and then paint over them, this has led the Editor to think that major engine components were painted separately. However, the evidence is far from conclusive. In restoring cars, Dave has all the bolts zinc plated, which is easily done by any commercial plater and looks nice, and he does not paint them. The "acorn" nuts which hold the rocker arm and spark plug covers are typically chrome or nickel; the book does not describe their finish. Most lock washers listed were "parkerized." The Editor believes this was an oxide finish, perhaps similar to gun bluing. (Anybody know for sure?) A question rather more abstruse, and which no one has asked, is whether "original" bolts had the little marks on their heads that some have today. The Editor recalls reading about this somewhere; perhaps some member can provide enlightenment. To conclude a long answer to a short question: cadmium or zinc plated bolts, left unpainted, would appear to be authentic, but if you really want to paint 'em, go ahead and do it.

QUESTION. Several people have asked whether the firewall was painted black or the color of the body.

ANSWER. Since it seems plain enough that the whole body shell, including the firewall, would have been painted in one operation, and since there would seem to be no reason for Buick to have slowed production facilities with a separate firewall painting step, the Editor puzzled over this for some time. Where are all these notions of black firewalls coming from? Well, the light eventually came on. I expect that all the cases of cars with black firewalls and different color bodies are cases of cars that were originally black all over.* (If you have such a car, check the paint code on the firewall ID plate: 1937 black is 500 and 1938 is 515.) Chassis-and-cowl units delivered to custom body builders probably were all painted black. In such a car, a black firewall with a different exterior color can be considered authentic, but for factory bodies the firewall should match the exterior.



^{*}Black was very popular in the 1930's and I would not be surprised to find that one-third of all 1937 and 1938 sedans, and half or more of the business coupes, were black. Its popularity began to decline after the War, and by the '60's and early '70's some makes or models could be had in black only on special order or in fleet sales. More recently, it has regained favor. Many old cars have pased through the hands of the young, who would not have cared for black. An exception was my friend Stewart, who in my law school days obtained a '41 Plymouth which had weathered to an olive green. Stewart liked black and had a \$49.95 paint job put on the Plymouth, thus creating a black car with a green firewall.

CARS FOR SALE



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H.LEE HOPKINS (#013) 1367 French Ave., Gridley, CA 95948. 916/846-5854 after 6 PM.

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Dear Bill

I recently came across a 37 Special Sport Coupe for sale, I'm not sure if its what you are looking for but perhaps someone in the club might be interrested. The car is located in Willimantic Connecticut, contact Jerry Stoddard at 1-203-742-6348 for information. The odometer shows 21,000 miles I wouldn't take that seriosly although the owner seems to. The car needs some body work but it is quite good for New England. The interior was done over 50's style so it needs a new interior. I was not able to drive the car but have been told it runs and handles well. If anyone wants more information they can contact me at 1-203-873-9715 evenings or 1-413-736-6399 days.

* NOPE! I'M STILL LOOKING.

Sincerely Yours
- Emmett Lyman #551







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